Parameter Survey

1. Choose the 3 parameters most likely to have a nonrandom effect on both area and volume of sea ice, in all seasons and in both hemispheres.
2. Choose the 2 parameters least likely to have such an effect.

Symbol	Description	Typical Value (CICE)	
C_f	ratio of ridging work rate to rate of change in potential energy (frictional dissipation)	17	1. Most likely:
C_s	fraction of shear energy contributing to ridging	0.5	•
C_w	ocean-ice drag coefficient	0.00536	•
e	ratio of ellipse major to minor axes (viscous-plastic rheology)	2	•
f_{srdg}	fraction of snow thrown into the ocean from ridging ice	0.5	2. Least likely:
ϵ	emissivity	0.95	•
SSL_i	surface scattering layer depth in ice for radiative absorption, surface temperature	5 cm	•
SSL_s	surface scattering layer depth in snow for radiative absorption, surface temperature	4 cm	
ρ_s	snow density	330 kg/m^3	
k_s	snow conductivity	0.3 W/m/K	
k_b	brine conductivity	0.5375 W/m/K	
dS/dt	strength of "slow" brine drainage	-1.5$\times10^{-7}$ m/s/K	
ν_b	dynamic viscosity of brine	1.79$\times10^{-3}$ kg/m/s	
f_{min}	minimum fraction of available meltwater that enters ponds	0.15	